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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

U.S. Serial No.:	**10/705,708**
Inventor(s):	**Hayden, et al.**
Title:	**APPARATUS FOR MEASURING CHILD SEAT ANCHOR TENSION**
Filed:	**11 November 2003**
Art Unit:	**3636**
Examiner:	**Joseph F. Edell**
Atty. Docket:	**DP-309773**

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service, in triplicate, as first class mail in an envelope addressed to: Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450 on:

1-23-08
Date

Kandace Brown
Kandace Brown

RESPONSE TO THE THIRD NOTICE OF NON-COMPLIANT APPEAL BRIEF

MS Appeal Brief
Hon. Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Dear Sir:

In response to the Notification of Non-Compliant Appeal Brief mailed 09 January 2008 and identified as Confirmation No.: 6391, please enter and consider the further Revised Appeal Brief enclosed herewith.

The Commissioner is hereby authorized to charge any fees associated with this communication and/or credit any overpayments to Deposit Account No. 50-0831.

Respectfully submitted,

J. Gordon Lewis

J. Gordon Lewis - Reg. No.: 28,735
Delphi Technologies, Inc.

Enclosure

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

U.S. Serial No.:	**10/705,708**
Inventor(s):	**Hayden, et al.**
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REVISED APPEAL BRIEF

MS Appeal Brief
Hon. Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Dear Sir:

Please enter the following Revised Appeal Brief in the appeal filed on 9 March 2007.

REAL PARTY IN INTEREST

The real party in interest is Delphi Technologies, Inc., by assignment from the inventors, Eric C. Hayden; Royce L. Rennaker; Chance L. Scales; and Duane D. Fortune.

RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences in the present application.

STATUS OF CLAIMS

Claims 1, 2, 8-11 and 13-19 are on appeal.

Claims 1, 2, 8 – 11 and 13 – 19 are pending in the Application. Claims 3 – 7, 12 and 20 – 24 have been withdrawn from consideration. Claim 9 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. Claims 1, 2, 8, 10, 11 and 13 – 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skofljanec et al. (U.S. 6,419,199 B1) in view of Miyagawa (U.S. 6,371,516 B1). The language of the current claims on Appeal is attached as Appendix A.

STATUS OF AMENDMENTS

Two Amendments were filed in response to the final Office Action dated 10 October 2006.

1. An amendment submitted on 9 March 2007 proposed amendments to claims 1 and 8.

2. A supplemental amendment submitted on 19 March 2007 proposed additional amendments to claims 1 and 8.

Advisory Actions responsive to each of the above-two amendments indicated that the proposed amendments will be entered for purposes of appeal.

SUMMARY OF THE CLAIMED SUBJECT MATTER

1. An apparatus for measuring a cinching tension (title; page 1, lines 5 – 8) on a child seat (26; page 3, line 2; figures 1 and 3) placed on a bottom cushion (22, page 2, line 30; figures 1 and 3) of a vehicle seat (10; page 2, line 21; figures 1 and 3), said vehicle seat (10; ibid) having a pressure sensor (14; page 2, line 23; figure 1) disposed therein operative to monitor the weight of an occupant (page 2, line 22) and provide an occupant weight output signal (page 2, line 24) to an occupant detection system electronic control unit (18; page 2, lines 24 and 25; figure 1), said child seat (26; ibid) having first and second tether straps (26a; page 3, line3; figures 1 and 3) affixed thereto for cinching said child seat (26; ibid) to said vehicle seat (10; ibid) independently of an occupant restraining seat belt system associated with said vehicle seat (10; ibid), said apparatus comprising:

first and second laterally spaced child seat anchor brackets (24a and 24b; page 3, lines 1 and 2; figures 1 – 4) straddling said child seat (26; ibid) in proximity to said bottom cushion (22; ibid), said first and second child seat anchor brackets (24a and 24b; ibid) being adapted to tensively secure said first and second tether straps (26a; page 3, line 3; figure 1) to said vehicle seat (10; ibid), respectively;

an anchor frame (32/50; page 3, line 11/page 4, line 9; figures 1 and 2/figures 3 and 4) extending across a lateral width dimension (figure 2/4) of the vehicle seat (10; ibid) and secured to a frame (20; page 2, line 29; figures 1 and 3) of the vehicle seat (10; ibid); and

a tension sensor (30a; page 3, line 11; figures 1 and 2) securing said first child seat anchor bracket (24a; ibid) to a first end (34a; page 3, line 21; figure 2) of said anchor frame (32/50; ibid), and means (30b; page 3, line 21; figure 2) securing said second child seat anchor bracket (24b; ibid) to a second end (34 b; page 3, line 21; figure 2) of said anchor frame(32/50; ibid), said tension sensor (30a; ibid) providing an output signal (page 3, lines 28 – 31) to said occupant detection system electronic control unit (18; ibid) as a function of the sensed tension in said tether straps (26a; ibid).

8. In a vehicle seat assembly (10; page 2, line 21; figures 1 and 3) including a generally vertically disposed back cushion (28; page 3, line 6; figures 1 and 3), a seat portion including a generally horizontally disposed bottom cushion (22; page 2, line 30; figures 1 and 3) carried upon a seat frame (20; page 2, line 29; figures 1 and 30), pressure sensor means (12; page 2, lines 21 and 22; figure 1 in combination with 14; page 2, line 23; figure 1) disposed within said seat portion (22/20; ibid) operative to monitor the weight of an occupant (page 2, line 22) and provide an occupant weight output signal (page 2, line 24) to an occupant detection system electronic control unit (18; page 2, lines 24 and 25; figure 1), and an occupant restraining seat belt (page 1, line 14), an apparatus (30a and 30b; page 3, line 11; figures 1 and 2) for measuring the tension exerted on a plurality of tether straps (26a; page 3, line 4; figure 1) by a child seat (26, page 3, line 2; figures 1 and 3) disposed on said bottom cushion (22; ibid), said tether straps (26a; ibid) arranged for securing said child seat (26; ibid) to said vehicle seat assembly (10; ibid), said apparatus comprising:

a plurality of laterally spaced child seat anchor brackets (24a and 24b; page 3, lines 1 and 2; figures 1 – 4) straddling said child seat (26; ibid), each anchor bracket (24a and 24b; ibid) adapted to tensively secure a corresponding tether strap (26a; ibid) affixed to said child seat (26; ibid); and

a tension sensor (30a and 30b; ibid) mountingly coupled between said seat frame (20; ibid) and at least one of said child seat anchor brackets (24a and 24b; ibid), said tension sensor (30a and 30b; ibid) operative to provide a tension sensor output signal (page 3, lines 28 – 31) to said occupant detection system electronic control unit (18; ibid) as a function of the sensed tension in said tether straps (26a; ibid).

The present invention is directed to an apparatus for measuring the tension exerted on a child seat anchoring system as part of a vehicle occupant weight detection system. The apparatus is employed with a vehicle seat equipped with an occupant weight sensor in the bottom cushion thereof which provides an occupant weight output signal to an occupant

detection system electronic control unit. The child seat has first and second tether straps attached to a laterally opposed pair of anchor brackets for securing the child seat to the vehicle seat independently of the vehicle seat's occupant restraining seat belt system. The anchor brackets are interconnected to the vehicle seat via an anchor frame and a tension sensor which provides an output signal to the electronic control unit as a function of sensed tension in the tether straps.

As shown in Figures 1 and 2, a child seat 26 is positioned on a bottom cushion 22 of a vehicle passenger seat 10 equipped with a fluid-filled seat cushion bladder 12 and associated pressure sensor 14 providing an output signal to an electronic control unit 18. Tether straps 26a interconnect the child seat to respective anchor brackets 24a & 24b carried on separate tension sensors 30a & 30b. The tension sensors are affixed to the vehicle passenger seat frame 20 by a laterally extending anchor frame 32, and are electrically in-circuit with the electronic control circuit via lines 40a & 40b to provide sensed tension output signals thereto.

The electronic control unit is operative to generate an output signal (depicted as an outwardly directed unnumbered arrow from the ECU in Figure 1) as a function of the occupant weight output signal and the tension sensor output signal. Refer page 4, lines 4 – 8.

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1. Applicant's claim of the benefit of a prior-filed application is not supported or enabled as required under 35 U.S.C. 112, first paragraph.

2. Claim 9 stands rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

3. Claims 1, 2, 8, 10, 11 and 13 – 19 stand rejected under 35 U.S.C. 102(a) as being unpatentable over Skofljanec et al. (U.S. 6,419,199 B1) in view of Miyagawa (U.S. 6,371,516 B1).

ARGUMENT

Issue 1: Rejection of Applicant's Claim of the Benefit of a Prior-Filed Application

The Applicant's claim of priority to prior-filed application 60/447,489 is denied by the Examiner who states that:

"The disclosure of the prior-filed application, Application No. 60/447,489, fails to provide adequate support or enablement in the manner provided by the first paragraph of 35 U.S.C. 112 for one or more claims of this application. The securing of the anchor frame to a frame of a vehicle seat and the brackets extending through a juncture gap between back and bottom cushions."

The Examiner contends that the securing of the anchor frame to a frame of the vehicle seat is not adequately supported in provisional application 60/447,489. To the contrary, two of the three views illustrated in drawing Figure 1 include bolt holes 12 in an end portion 10 of a tether anchor plate. Furthermore, the description of Figure 1 at page 1, lines 19 – 22 of the specification of the 60/447,489 application explicitly states *"FIG. 1 shows three views of an end portion 10 of a tether anchor plate that extends across the back of a seat cushion and is bolted to* the *frame using bolt holes 12. A belt tension*

sensor 14 is affixed to the plate, and a ring 16 extends therefrom for attachment of a tether strap.". When read in context, the provisional application clearly and unambiguously describes the securing of the anchor frame to the seat frame.

The claim language pertaining to extending of the brackets through the juncture gap between back and bottom cushions has been deleted and does not appear in any of the claims at issue in this appeal. Accordingly, this portion of the Examiner's rejection of the claim of priority to a prior-filed application is believed to be moot.

The Applicants respectfully submit that the specification and drawings contained in the provisional application clearly provide adequate support and enablement as required by the first paragraph of 35 U.S.C. 112.

Issue 2: Rejection of Claim 9

Claim 9 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The Examiner states that:

"The claim(s) contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification does not recite or imply that control unit is operative to generate an output signal. Specification sets forth that an occupant's weight may be sensed by pressure sensor 14. However, no integration or evaluation of the weight output signal and the tension sensor output signal in conjunction with one another has been recited. How do the two signals combine to generate an output signal? What is this output signal utilized to control as a function of occupant's weight?".

Claim 9 states *"The apparatus of claim 8, wherein said occupant detection system electronic control unit is operative to generate an output signal as a function of said occupant weight output signal and said tension sensor output signal.".* Figure 1 clearly

schematically depicts a passenger occupant detection system electronic control unit 18 receiving an input pertaining to an occupant's weight via a fluid-filled seat cushion bladder 12 interconnected with a pressure sensor 14 by a tube 16, and inputs pertaining to tension in tethers 26a via tension sensors 30a & 30b interconnected with the PODS ECU 18 by lines 40a & 40b. The resulting output of the PODS ECU is depicted by an unnumbered arrow. The specification, at page 4, lines 4 – 8 states *"The PODS ECU 18 utilizes the anchor tension signals to detect the presence of an infant or child seat 26,* ***and also to compensate the occupant seat weight indication (the pressure signal of pressure sensor 14, for example) or a threshold to which the occupant seat weight indication is compared.***".

U.S. Patent No.: 6,605,877, which is incorporated in the present application by reference (page 3, lines 17 – 19), describes an analogous processing of seat sensor 34 (occupant weight) and seat belt tension sensor 38 outputs to control a vehicle airbag module 12. Refer drawing figure 1.

The Applicants respectfully submit that, when read in context of the teaching of the present application, including the teaching of the '877 reference, the Examiner's questions are clearly and unambiguously answered, and claim 9 finds clear support and enablement as required by the first paragraph of 35 U.S.C. 112.

Issue 3: Rejection of Claims 1, 2, 8, 10, 11 and 13 – 19

Claims 1, 2, 8, 10, 11 and 13 – 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skofljanec et al. in view of Miyagawa.

The Examiner contends that all elements of claims 1, 2, 8, 10, 11 and 13 – 19 are presented in Skofljanec et al. except for an anchor frame secured to the frame of the vehicle seat, and Miyagawa discloses "anchor brackets 22a (see Fig. 2) in the gap between back and bottom cushions and sensors 32 are secured to an anchor frame 20

extending across the lateral width dimension of the vehicle seat and secured to a frame 16 (Fig. 1) of the vehicle seat ...".

However, it is submitted that the Examiner has not established that all of the elements of the claimed invention set forth in independent claims 1 and 8 are presented in the prior art. Claim 1 specifies *"An apparatus ... comprising ... a tension sensor securing said first child seat anchor bracket to a first end of said anchor frame, and means securing said second child seat anchor bracket to a second end of said anchor frame,* ***said tension sensor providing an output signal to said occupant detection system electronic control unit as a function of the sensed tension in said tether straps."***.

The Examiner states that the Hall effect sensors 19 of Skofljanec et al. sense movement of the biased slider when put under tension, and thereby functions as a tension sensor. The Appellants contradict the Examiner's position. The device described in Skofljanec et al. is simply a device for monitoring the locking position of a connecting device 5 for fixing a child seat to a motor vehicle. A detection device 15 is provided in or at the base body 11 for detection of the correct locking position of the locking component 3 and the support component 7 by detecting the position of the slider 13, whereby the detection device 15 registers, in addition to the locking position, at least one additional position of the slider 13, at a distance from the locking position. Simply stated, Skofljanec et al. does not disclose or suggest a tension sensor that outputs a signal to an occupant detection system ECU as a function of tension sensed in child seat tether straps. The Skofljanec et al. device is intended to ensure the proper coupling of a child seat to a vehicle seat. It has nothing to do with occupant weight detection and thus, would not be logically applied by an artisan seeking a solution provided by the present invention.

Similarly, the Miyagawa device discloses a position detection switch 32 as part of a system ensuring the proper coupling of a child seat to a vehicle seat. It does not disclose or suggest a tension sensor that outputs a signal to an occupant detection system ECU as a function of tension sensed in child seat tether straps.

Independent claim 8 specifies *"In a vehicle seat assembly ... an apparatus ... comprising ... a tension sensor mountingly coupled between said seat frame and at least one of said child seat anchor brackets,* ***said tension sensor operative to provide a tension sensor output signal to said occupant detection system electronic control unit as a function of the sensed tension in said tether straps."***. For the reasons outlined hereinabove, claim 8 is similarly distinguishable from both Skofljanec et al. and Myiagawa, individually, or in combination.

For these reasons, it is respectfully submitted that the Examiner has failed to establish a *prima facie* case of obviousness to support a rejection of Appellant's invention as set forth in independent claims 1 and 8 over any permissible combination of Skofljanec et al. in view of Myiagawa.

Appellant's invention as set forth in dependant claims 2, 10, 11 and 13 – 19 depend from either independent claim 1 or independent claim 8 to include all of the features of their respective independent claim and to add an additional element further distinguishing over the art of record.

Neither of the applied references disclose or suggest providing both child seat tether tension and occupant weight signals to an electronic control unit for suppressing deployment of vehicle restraints. Accordingly, no combination of the two could obviate the present invention.

For these reasons, it is respectfully submitted that Appellant's invention as set forth in claims 1, 2, 8, 10, 11 and 13 – 19 patentably defines over any possible combination of the cited references as posed by the Examiner.

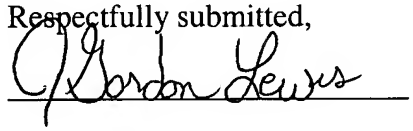
CONCLUSION

For the reasons set forth above, it is respectfully submitted that: (a) Applicant's prior-filed application, Application No. 60/447,489, provides adequate support and enablement in the manner provided by the first paragraph of 35 U.S.C. 112 for claims 1, 2, 8 – 11 and 13 – 19 of this application to support Applicant's priority claim; (b) Applicant's invention, as set forth in claim 9, complies with the written description requirement of 35 U.S.C. 112; and (c) Applicant's invention, as set forth in claims 1, 2, 8 – 11 and 13 – 19 patentably defines over the cited references and is not suggested or rendered obvious thereby. As such, it is respectfully submitted that the Examiner's final rejection of Applicant's priority claim as well as claims 1, 2, 8 – 11 and 13 – 19 is erroneously based and its reversal is respectfully requested.

No oral hearing is requested.

The Commissioner is hereby authorized to charge any fees associated with this communication and/or credit any overpayments to Deposit Account No.: 50-0831.

Respectfully submitted,



J. Gordon Lewis - Reg. No.: 28,735

Appendix Index

APPENDIX A: CLAIMS AT ISSUE IN APPEAL

1. An apparatus for measuring a cinching tension on a child seat placed on a bottom cushion of a vehicle seat, said vehicle seat having a pressure sensor disposed therein operative to monitor the weight of an occupant and provide an occupant weight output signal to an occupant detection system electronic control unit, said child seat having first and second tether straps affixed thereto for cinching said child seat to said vehicle seat independently of an occupant restraining seat belt system associated with said vehicle seat, said apparatus comprising:

first and second laterally spaced child seat anchor brackets straddling said child seat in proximity to said bottom cushion, said first and second child seat anchor brackets being adapted to tensively secure said first and second tether straps to said vehicle seat, respectively;

an anchor frame extending across a lateral width dimension of the vehicle seat and secured to a frame of the vehicle seat; and

a tension sensor securing said first child seat anchor bracket to a first end of said anchor frame, and means securing said second child seat anchor bracket to a second end of said anchor frame, said tension sensor providing an output signal to said occupant detection system electronic control unit as a function of the sensed tension in said tether straps.

2. The apparatus of Claim 1, wherein said tension sensor includes a first portion rigidly secured to said anchor frame and a second portion integral with a respective child seat anchor bracket.

8. In a vehicle seat assembly including a generally vertically disposed back cushion, a seat portion including a generally horizontally disposed bottom cushion carried upon a seat frame, pressure sensor means disposed within said seat portion operative to

monitor the weight of an occupant and provide an occupant weight output signal to an occupant detection system electronic control unit, and an occupant restraining seat belt, an apparatus for measuring the tension exerted on a plurality of tether straps by a child seat disposed on said bottom cushion, said tether straps arranged for securing said child seat to said vehicle seat assembly, said apparatus comprising:

a plurality of laterally spaced child seat anchor brackets straddling said child seat, each anchor bracket adapted to tensively secure a corresponding tether strap affixed to said child seat; and

a tension sensor mountingly coupled between said seat frame and at least one of said child seat anchor brackets, said tension sensor operative to provide a tension sensor output signal to said occupant detection system electronic control unit as a function of the sensed tension in said tether straps.

9. The apparatus of Claim 8, wherein said occupant detection system electronic control unit is operative to generate an output signal as a function of said occupant weight output signal and said tension sensor output signal.

10. The apparatus of Claim 8, further comprising an anchor frame mechanically interconnecting said seat frame and said tension sensor.

11. The apparatus of Claim 10, wherein said anchor frame is rigidly affixed to said seat frame.

13. The apparatus of Claim 10, wherein said anchor frame defines a pocket area for nestingly receiving and securing said tension sensor therein.

14. The apparatus of Claim 13, wherein said pocket area is integrally formed adjacent one lateral end of said anchor frame.

15. The apparatus of Claim 10, wherein said anchor frame defines surface contours therein to enhance characteristic stiffness of said anchor frame.

16. The apparatus of Claim 15, wherein said surface contours are integrally formed in said anchor frame as a plurality of laterally spaced depressions therein.

17. The apparatus of Claim 8, wherein said apparatus comprises a plurality of tension sensors, one tension sensor associated with each child seat anchor bracket.

18. The apparatus of Claim 17, wherein each said tension sensor is operative to provide an associated tension sensor output signal to said occupant detection system electronic control unit.

19. The apparatus of Claim 10, wherein said apparatus comprises a tension sensor associated with each said child seat anchor bracket, each of said tension sensors including a first portion rigidly secured to said anchor frame and a second portion integral with a corresponding child seat anchor bracket.

APPENDIX B: EVIDENCE

NONE

APPENDIX C: RELATED PROCEEDINGS

NONE